

287704 to Okamoto, U.S. Patent No. 7,753,548 to Ogawa and U.S. Publication No. 2003/0063630 to Sakai. Paragraph 3 of the Official Action rejects claims 6, 17-20 and 22 as obvious based on the combination of Tanaka '524, Yamazaki '320, Tanaka '042, Okamoto, Ogawa, Sakai and U.S. Patent No. 6,545,248 to Tanaka '248. The Applicant respectfully traverses the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2144.04, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some reason to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Independent claims 1, 3, 9, and 11 recite a slit for blocking an end portion of a laser beam in a major-axis direction of the laser beam. Independent claim 2 recites that the first irradiation region and the second irradiation region overlap with each other in an overlapping portion, and that the overlapping portion is a microcrystal region. For the reasons provided below, Tanaka '524, Yamazaki '320, Tanaka '042, Okamoto, Ogawa, Sakai and Tanaka '248, either alone or

in combination, do not teach or suggest the above-referenced features of the present invention.

The Official Action concedes that Tanaka '524, Yamazaki '320 and Okamoto do not teach a slit for blocking an end portion of a laser beam in a major-axis direction of the laser beam (page 3, Paper No. 20111027). The Official Action asserts that "Tanaka '042 shows it is known in the art that a slit (205) is provided to block an end portion of the laser beam in a major-axis direction of the beam to form a linear shape. Also see Figure 2" (*Id.*). The Applicant respectfully disagrees and traverses the assertions of the Official Action.

Tanaka '042 appears to illustrate an optical system, for example, in a top view shown in Figure 1A, a side view shown in Figure 1B and a perspective view shown in Figure 2, each of which is reproduced and annotated below (see also, Tanaka '042 at column 8, lines 66 and 67). The Figures have been annotated to identify the major-axis of the laser beam of Tanaka '042. However, Tanaka '042 discloses that slit 205 is disposed on the optical path. However, as illustrated in Figure 2 of Tanaka '042, slit 205 only potentially blocks an end portion of the laser beam in a minor-axis direction of the laser beam, not in the annotated major-axis direction. Therefore, the Applicant respectfully submits that Tanaka '524, Yamazaki '320, Okamoto and Tanaka '042, either alone or in combination, do not teach or suggest a slit for blocking an end portion of a laser beam in a major-axis direction of the laser beam.

FIG. 1A

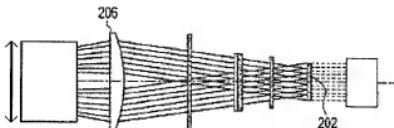


FIG. 1B

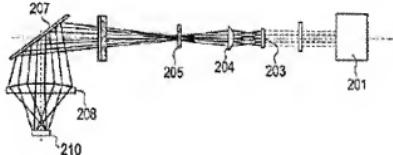
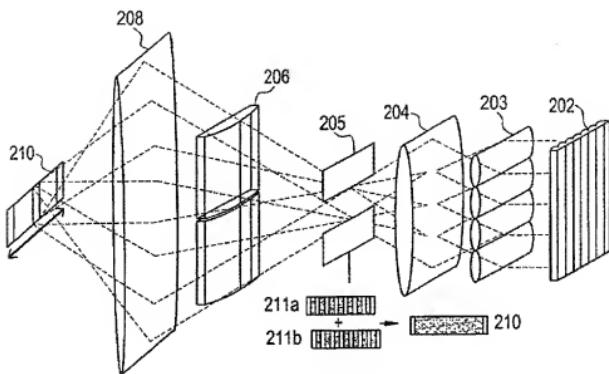


FIG. 2



Furthermore, with respect to claim 2, the Official Action is wholly silent with respect to the limitation that the first irradiation region and the second irradiation region overlap with each other in an overlapping portion, and that the overlapping portion is a microcrystal region. On the other hand, while the Official Action asserts that “[w]ith respect to the recitation of forming a crystal grain grown continuously in a moving direction with a first irradiation region and a second irradiation region that are overlapped, Tanaka '524 shows the overlapped region as shown in Figure 16B, and the formation of the crystal grain would have been obvious result or predictable result...” (page 4, Paper No. 20111027). However, Tanaka '524 teaches that when laser annealing is carried out by the scanning method in shown in Figures 16A and 16B, it is possible to obtain “a polycrystal silicon film” (see, Tanaka '524 at column 16, lines 4-20). Therefore, the Applicant respectfully submits the Official Action has not established a *prima facie* case of obviousness with respect to the feature of the claimed invention that the overlapping portion is a microcrystal region.

In addition, Ogawa, Sakai and Tanaka '248 do not cure the deficiencies in Tanaka '524, Yamazaki '320, Tanaka '042 and Okamoto. The Official Action relies on Ogawa, Sakai and Tanaka '248 to allegedly teach the features of the dependent claims. Specifically, the Official Action relies on Ogawa and Sakai to allegedly teach a solid-state laser using Nd ion or Yb ion doped crystal (page 3, Paper No. 20111027) and relies on Tanaka '248 to allegedly teach a non-linear optical element to convert a fundamental into a second harmonic (page 5, Id.). However, Tanaka '524, Yamazaki '320, Tanaka '042, Okamoto, Ogawa, Sakai and Tanaka '248, either alone or in combination, do not teach or suggest a slit for blocking an end portion of a laser beam in a major-axis direction of the laser beam or that an overlapping portion of a first irradiation region and a second irradiation region is a microcrystal region. Since Tanaka '524, Yamazaki '320, Tanaka '042, Okamoto, Ogawa, Sakai and Tanaka '248 do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized to charge fees under 37 C.F.R. §§ 1.16, 1.17, 1.20(a), 1.20(b), 1.20(c), and 1.20(d) (except the Issue Fee) which may be required now or hereafter, or credit any overpayment to Deposit Account No. 50-2280.

Respectfully submitted,



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